Center for
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DATA SUMMARY
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Alzheimer's Disease Deaths
California 1999-2000

By Cynthia Schmidt

Introduction

Alzheimer's disease is a progressive, degenerative disease of the brain, and the most common form of dementia. Fourteen million Americans will have Alzheimer's disease by the middle of this century (2050) unless a cure or prevention is found. One in ten persons over age 65 and nearly half of those 85 and older have Alzheimer's disease. A small percentage of people in their 30's and 40's get the disease.[1]

For the first time, Alzheimer's disease ranked eighth among the leading causes of death in California and in the United States during 1999 as well as 2000.[2,3,4] The National Center for Health Statistics (NCHS) provided an explanation as follows: "Changes in the numbers of deaths from 1998 to 1999 can be explained by two factors. First, due to the introduction of International Classification of Diseases, Tenth Revision (ICD-10) beginning with 1999 mortality data, some changes occurred in cause of death titles and groupings and in the rules for selecting the underlying cause of death. Mortality data for 1998 were classified according to the International Classification of Diseases, Ninth Revision (ICD-9). The second factor is actual changes in mortality levels between 1998 and 1999." [3]

This report presents data on California's Alzheimer's disease deaths for 1999 and 2000, emphasizing 2000 data, and provides analysis of crude and age-adjusted death rates for California residents by sex, age, and race/ethnicity. Alzheimer's disease data in this report are extracted from vital statistics records with death attributed to Alzheimer's disease as defined by ICD-10 code G30 in accordance with the National Center for Health Statistics Reports.[5]

Highlights

- **Alzheimer's disease is the eighth leading cause of death in California and the United States.**
- **Of all Alzheimer's disease deaths in California, 99.1 percent were among people aged 65 and older.**
- **In 2000, California's age-adjusted death rate of 15.1 is lower than the U.S. rate of 18.0.**
- **Madera County has the highest reliable age-adjusted Alzheimer's disease death rate and Tulare County the lowest.**

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[1] Alzheimer's Association website, www.alz.org, *Alzheimer's Disease Statistics*.

[2] State of California, Department of Health Services, Death Records, 1999 and 2000.

[3] Anderson, RN. *Deaths; Leading causes for 1999. National Vital Statistics Reports;* Vol 49, No. 11. Hyattsville, Maryland: National Center for Health Statistics. 2001.

[4] Anderson, RN. *Deaths; Leading causes for 2000. National Vital Statistics Reports;* Vol 50, No. 16. Hyattsville, Maryland: National Center for Health Statistics. 2002.

[5] National Center for Health Statistics. *Vital Statistics, Instructions for Classifying the Underlying Cause of Death*. NCHS Instruction Manual, Part 9. Hyattsville, Maryland: Public Health Service, 1999.

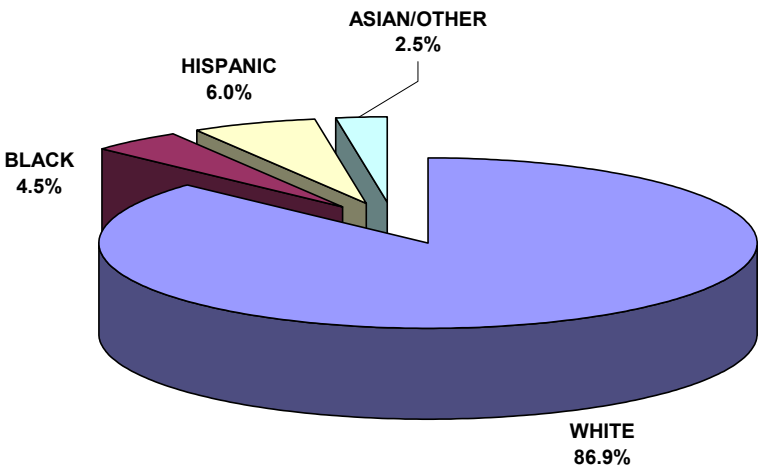
An overview of data limitations and qualifications is provided at the end of this report.

Alzheimer's Disease Deaths

Table 1 (page 9) shows Alzheimer's disease death data for 2000 among California residents by race/ethnicity, age, and sex. In 2000 there were 4,398 deaths due to Alzheimer's disease. Of these deaths, 3,010 or 68.4 percent occurred among females and 1,388 or 31.6 percent occurred among males.

In 1999 (**Table 2,** page 10) there were 3,934 deaths due to Alzheimer's disease. Of these deaths, 2,675 or 68.0 percent occurred among females and 1,259 or 32.0 percent occurred among males.

FIGURE 1
ALZHEIMER'S DISEASE DEATHS BY RACE/ETHNICITY*
CALIFORNIA 2000
(N=4,398)



Source: State of California, Department of Health Services, Death Records, 2000.
***Calculated using death data for California residents only.**

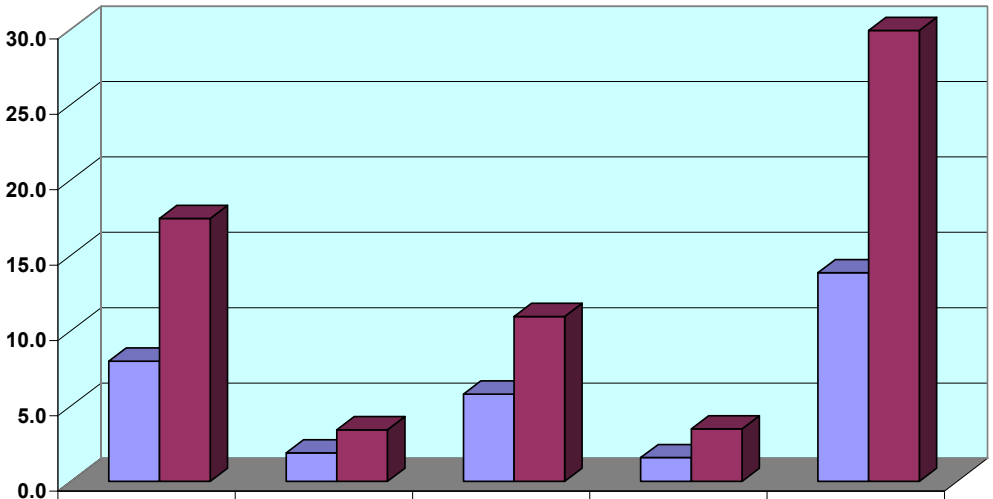
As shown in **Figure 1**, in 2000 the largest percent of Alzheimer's disease deaths (86.9 percent) were among Whites, followed by Hispanics (6.0 percent), Blacks (4.5 percent), and Asian/Other (2.5 percent). In 1999 the largest percent of Alzheimer's disease deaths (87.1 percent) were among Whites, followed by Hispanics (6.2 percent), Blacks (4.6 percent), and Asian/Other (2.2 percent). California's elderly population, aged 65 and older, accounted for 99.1 percent of all Alzheimer's disease deaths for both years.

Alzheimer's Disease Crude Death Rates

As shown in **Table 1** (page 9), California's Alzheimer's disease crude death rate in 2000 was 12.7 per 100,000 population, an increase of 10.4 percent over the 1999 rate of 11.5. **Figure 2** (page 3) shows males had a crude death rate of 8.0 per 100,000 population and females had a rate of 17.4. The crude death rates for females were higher than the rates for males in all race/ethnic groups. The differences were statistically significant within each race/ethnic group.

See the Methodological Approach Section later in this report for an explanation of crude and age-specific death rates.

FIGURE 2
ALZHEIMER'S DISEASE CRUDE DEATH RATES
BY SEX AND RACE/ETHNICITY *
CALIFORNIA 2000



	TOTAL	ASIAN/OTHER	BLACK	HISPANIC	WHITE
MALE	8.0	1.9	5.8	1.6	13.8
FEMALE	17.4	3.4	10.9	3.5	29.9

Source: State of California, Department of Health Services, Death Records, 2000.
*Calculated using death data for California residents only.

In 2000 the crude death rates for White males (13.8) and White females (29.9) were significantly higher than the rates for males and females in all other race/ethnic groups. The rate for Black males (5.8) was significantly higher than the rates for both Asian/Other males (1.9) and Hispanic males (1.6). The Black female crude death rate of 10.9 was significantly higher than the rates for Hispanic females (3.5) and Asian/Other females (3.4).

In 1999 males had a crude death rate of 7.4 per 100,000 population and females had a rate of 15.8 (**Table 2,** page 10). The crude death rates for females were also higher than the rates for males in all race/ethnic groups. The differences were statistically significant within each race/ethnic group except for the Asian/Other group.

The differences between race/ethnic groups followed the same pattern as in 2000. The rates for White males (12.6) and White females (26.8) were significantly higher than males and females in all other race/ethnic groups. The rate for Black males (5.6) was significantly higher than the rates for both Asian/Other males (1.7) and Hispanic males (1.5). The Black female crude death rate of 9.9 was significantly higher than the rates for Hispanic females (3.3) and Asian/Other females (2.5).

Alzheimer's Disease Age-Specific Death Rates

Table 1 (page 9) and **Table 2** (page 10) show that the reliable age-specific death rates for Alzheimer's disease for California residents increased with age for all race/ethnic groups in both years.

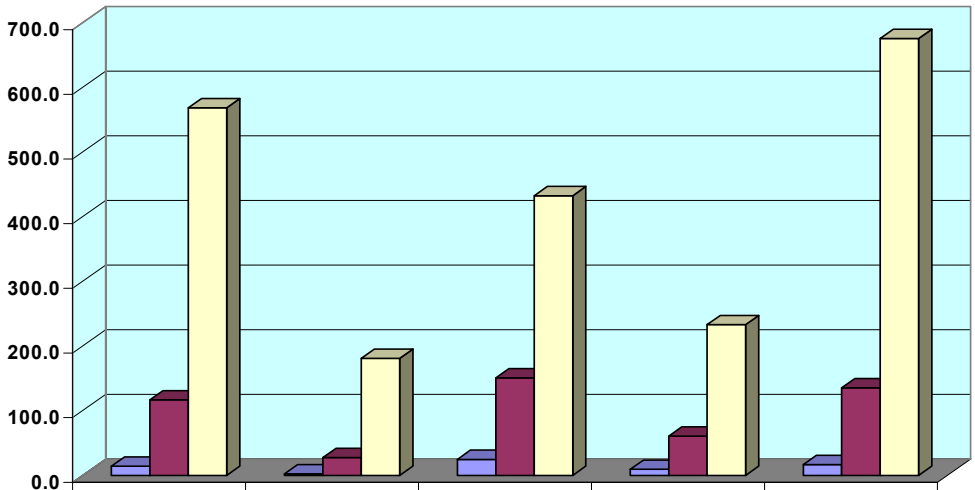
See the Vital Statistics Query System (VSQ) at our Web site www.dhs.ca.gov/hisp/Applications/vsq/vsq.cfm to create your own vital statistics tables.

Because of the small numbers of Alzheimer's disease deaths occurring among people under age 65, age-specific death rates for the younger age groups are not statistically reliable. Therefore, **Figure 3** shows age-specific death rates only for age groups 65 to 74, 75 to 84, and 85 and older for 2000.

Blacks experienced the highest rates of all the race/ethnic groups in the 65 to 74 and 75 to 84 age groups. Whites experienced the highest rates in the 85 and older age group. The Asian/Other group had the lowest age-specific rates in the 75 to 84 and 85 and older age groups compared with the other race/ethnic groups. The Asian/Other rate for the 65 to 74 age group was unreliable. The Hispanic rates for each of the three age-specific groups were significantly lower than the rates for Whites and Blacks. The Hispanic rates were significantly higher than those of the Asian/Other group in the 75 to 84 age groups.

In 1999 (**Table 2,** page 10) Whites show the highest rates of all the race/ethnic groups in the 75 to 84, and 85 and older age groups. Blacks experienced the highest rates in the 65 to 74 year old age group compared with the same age group for each race/ethnicity. The Asian/Other group had the lowest age-specific rates in all three of the older age groups compared with each race/ethnicity of the same age group. The Hispanic rates for each of the three age-specific groups were significantly lower than the rates for Whites and Blacks, but significantly higher than the reliable rates of the Asian/Other 75 to 84 and 85 older age groups.

FIGURE 3
ALZHEIMER'S DISEASE AGE SPECIFIC DEATH RATES*
CALIFORNIA 2000



	TOTAL	ASIAN/OTHER	BLACK	HISPANIC	WHITE
65-74	14.3	2.3	24.6	9.4	16.6
75-84	116.6	27.4	150.7	60.6	135.4
85 and Older	568.3	180.9	432.5	233.0	675.4

Source: State of California, Department of Health Services, Death Records, 2000.
*Calculated using death data for California residents only.

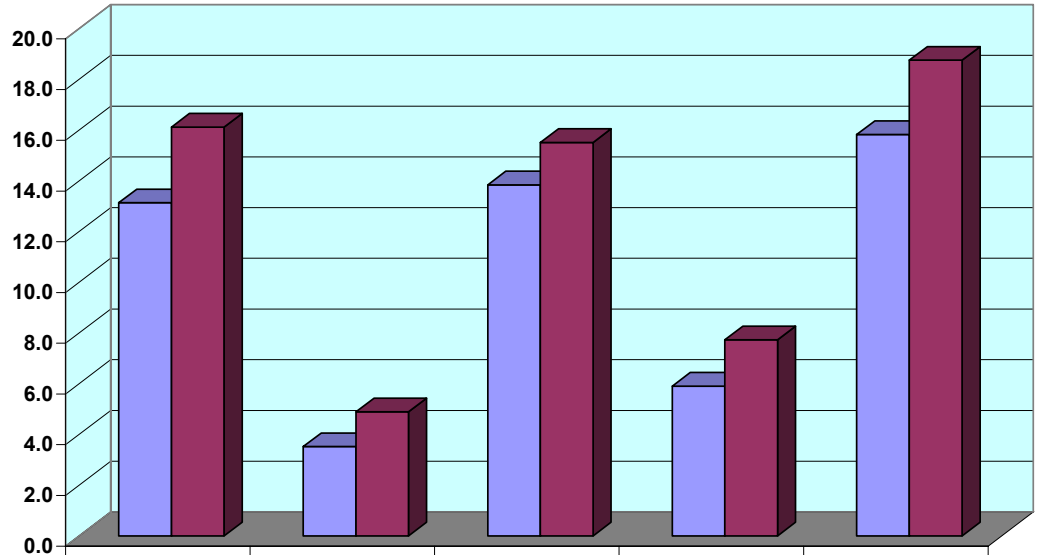
Alzheimer's Disease Age-Adjusted Death Rates

The Alzheimer's age-adjusted death rate for California residents in 2000 was 15.1, an increase of 7.9 percent from the 1999 rate of 14.0. However, California's age-adjusted death rate was lower than the U. S. rate of 18.0 per 100,000 population.[4]

For more data, see DHS Center for Health Statistics, Home Page at www.dhs.ca.gov/org/hisp/chs/chsindex.htm

Figure 4 shows age-adjusted Alzheimer's disease death rates for 2000 among California residents by race/ethnicity and sex. Females had higher age-adjusted death rates than males among the major race/ethnic groups. White females had the highest age-adjusted rate (18.8), followed by Black females (15.5), Hispanic females (7.7), and Asian/Other females. The White female rate was significantly higher than female rates of all race/ethnic groups and was the highest rate among all the race/ethnic groups of both sexes. Among males, Whites had the highest rates. The White male rate (15.8) was significantly higher than the Hispanic (5.9) and Asian/Other (3.5) male rates. It was also higher than the Black male rate (13.8), but the difference was not statistically significant.

FIGURE 4
ALZHEIMER'S DISEASE AGE-ADJUSTED DEATH RATES*
CALIFORNIA 2000



	TOTAL	ASIAN/OTHER	BLACK	HISPANIC	WHITE
MALE	13.1	3.5	13.8	5.9	15.8
FEMALE	16.1	4.9	15.5	7.7	18.8

Source: State of California, Department of Health Services, Death Records, 2000.
*Calculated using death data for California residents only.

In 1999 (**Table 2,** page 10) females had higher age-adjusted death rates than males within the major race/ethnic groups, with the exception of Blacks. Although the Black male age-adjusted rate was higher (14.6) than the Black female rate (14.2), the difference was not statistically significant. Among females, Whites had the highest age-adjusted rate (17.2), followed by Blacks (14.2), Hispanics (7.4), and Asian/Other (3.8). The White female rate was significantly higher than White males (14.8) and all the race/ethnic groups of both sexes, except for Black males which was lower, but not statistically significant. Among males, Whites had the highest rates. The White male rate (14.8) was significantly higher than the Hispanic (5.9) and Asian/Other (3.0) male rates. It was also higher than the Black male rate (14.6), but the difference was not statistically significant.

Alzheimer's Disease Death Rates for California Counties

Table 3 (page 11) shows the average numbers of Alzheimer's disease deaths for 1999-2000 with the crude and age-adjusted death rates for California and its 58 counties.

You can read more about crude and age-adjusted rates on the National Center for Health Statistics Web site at www.cdc.gov/nchs/

Among the 58 counties, Los Angeles County had the highest average number of deaths (796.0), which was 19.1 percent of the two-year average number of Alzheimer's disease deaths in California (4,166.0). San Diego County had the next highest average number of deaths (745.5) followed by Orange County (278.5). Alpine County was the only county to have no Alzheimer's disease deaths in the two-year period, 1999-2000.

Of the counties with reliable crude death rates, Napa County had the highest rate (33.2 per 100,000 population). Madera County had the second highest rate (27.9) followed by San Diego County (25.8). Tulare County had the lowest crude death rate (5.2). The rate for California was 12.2.

Madera County had the highest reliable age-adjusted death rate (30.9), followed by San Diego County (30.1) and Napa County (23.1). Similar to the crude death rates, Tulare County also had the lowest reliable age-adjusted death rate (6.2). California's rate was 14.9.

Alzheimer's Disease Deaths among the Three City Health Jurisdictions

Table 4 shows the 1999-2000 average numbers of Alzheimer's disease deaths and crude death rates for California's three city health jurisdictions.

Age-adjusted death rates were not calculated for the city health jurisdictions because city population data by age are not available.

TABLE 4
ALZHEIMER'S DISEASE DEATHS
AMONG THE CITY HEALTH JURISDICTIONS*
CALIFORNIA, 1999-2000

CITY HEALTH JURISDICTION	AVERAGE NUMBER OF DEATHS	1999 POPULATION	CRUDE DEATH RATE
BERKELEY	20.0	102,200	19.6
LONG BEACH	39.0	451,500	8.6
PASADENA	20.0	132,200	15.1

Note: Rates are per 100,000 population; ICD-10 codes G30.
Sources: State of California, Department of Finance, E-4 Historical City/County Population Estimates 1991-2000, with 1990 Census Counts, March 2002.
State of California, Department of Health Services, Death Records.
*Calculated using death data for California residents only.

Long Beach had the highest number of deaths due to Alzheimer's disease (39.0), followed by Berkeley (20.0), and Pasadena (20.0). Among the crude death rates, Berkeley had a rate of 19.6 per 100,000 population, Pasadena (15.1), and Long Beach (8.6).

Methodological Approach

The methods used to analyze vital statistics data are important. Analyzing only the number of deaths has its disadvantages and can be misleading because the population at risk is not taken into consideration. Crude death rates show the actual rate of dying in a given population, but because of the age compositions of various populations, crude rates do not provide a statistically valid method for comparing geographic areas or multiple reporting periods. Age-specific death rates are the number of deaths per

100,000 population in a specific age group and are used along with standard population proportions to develop a weighted average rate. This rate is referred to as an age-adjusted death rate and removes the effect of different age structures of the populations whose rates are being compared. Age-adjusted death rates, therefore, provide the preferred method for comparing different race/ethnic groups, sexes, and geographic areas, and for measuring death rates over time. The year 2000 population is used as the standard for age-adjustment in this report.

Data Limitations and Qualifications

The Alzheimer's disease death data presented in this report are based on vital statistics records with ICD-10 code G30 as defined by the National Center for Health Statistics.[5]

The term "significant" within the text means that the variance is statistically significant based on the difference between two independent rates ($p < .05$).

As with any vital statistics data, caution needs to be exercised when analyzing small numbers, including the rates derived from them. Death rates calculated from a small number of deaths and/or population tend to be unreliable and subject to significant variation from one year to the next. To assist the reader, 95 percent confidence intervals are provided in the data tables as a tool for measuring the reliability of death rates. Rates with a relative standard error (coefficient of variation) greater than or equal to 23 percent are indicated with an asterisk (*).

Beginning in 1999 cause of death is reported in the United States using the ICD-10.[6] Cause of death for 1979 through 1998 was coded using the ICD-9. Depending on the specific cause of death, the number of deaths and death rate are not comparable between ICD-9 and ICD-10. Therefore, our analyses involve only ICD-10 data for this report (1999-2000) and do not combine both ICD-9 and ICD-10 data.

The variability of the rates has increased in **Tables 3** (page 11) and **4** (page 6) because of the unavailability of earlier years of data. Three-year average numbers using ICD-10 coding for cause of death will reduce this problem when the data are available in 2003.

The four race/ethnic groups presented in the tables are mutually exclusive. White, Black, and Asian/Other exclude Hispanic ethnicity, while Hispanic includes any race/ethnic group. In order to remain consistent with the population data obtained from the Department of Finance, the "White race/ethnic group" includes: White, Other (specified), Not Stated, and Unknown, and "Asian/Other race/ethnic group" includes: Aleut, American Indian, Asian Indian, Asian (specified/unspecified), Cambodian, Chinese, Eskimo, Filipino, Guamanian, Hawaiian, Hmong, Japanese, Korean, Laotian, Other Pacific Islander, Samoan, Thai, and Vietnamese. In addition, caution should be exercised in the interpretation of mortality data by race/ethnicity. Misclassification of race/ethnicity on the death certificate may contribute to death rates that may be underestimated among Hispanics and Asian/Other.[7]

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[6] World Health Organization. International Statistical Classification of Diseases and Related Health Problems. Tenth Revision. Geneva: World Health Organization. 1992.

[7] Rosenberg HM, et al. *Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research, 1999*. Vital and Heath Statistics, Series 2 No. 128, National Center for Health Statistics, DHHS (PHS) Publication, No. 99-1328, September 1999.

Beginning in 2000 federal race/ethnicity reporting guidelines changed to allow the reporting of up to three races on death certificates. The race/ethnic groups in this report are tabulated based on the first listed race on those certificates where more than one race was listed. Race groups for 2000 are therefore not strictly compatible with prior years and trends should be viewed with caution

Effective with 1999 mortality data, the standard population for calculating age-adjustments was changed from 1940 population standard to the year 2000 population standard in accordance with new statistical policy implemented by the National Center for Health Statistics. The new population standard affects measurement of mortality trends and group comparisons. Of particular note are the effects on race comparison of mortality.[8] Age-adjusted rates presented in this report are not comparable to rates calculated with different population standards.

In addition, the population data used to calculate the crude rates in **Table 4** (page 6) differ from the population data used to calculate the crude rates in **Table 3** (page 11). Consequently, caution should be exercised when comparing the crude rates among the three city health jurisdictions with the rates among the 58 California counties. Age-adjusted rates for city health jurisdictions were not calculated.

For a more complete explanation of the age-adjustment methodology used in this report, see the "Healthy People 2010 Statistical Notes publication." [9] Detailed information on data quality and limitations is presented in the appendix of the annual report, "Vital Statistics of California." [10] Formulas used to calculate death rates are included in the technical notes of the "County Health Status Profiles" report.[11]

This Data Summary was prepared by Cynthia Schmidt, Center for Health Statistics, 304 S Street, P.O. Box 942732, Sacramento, CA 94234-7320, Telephone (916) 445-6355.

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[8] Kochanek KD, Smith BL, Anderson RN. *Deaths: Preliminary Data for 1999*. National Vital Statistics Reports; Vol. 49, No. 3. Hyattsville, Maryland: National Center for Health Statistics. 2001.

[9] Klein RJ, Schoenborn, CA. *Healthy People 2010 Statistical Notes: Age Adjustment using the 2000 Projected U.S. Population*. National Center for Health Statistics, DHHS Publication, No 20. January 2001.

[10] Riedmiller K. Bindra K. *Vital Statistics of Calfiornia, 1999*. Center for Health Statistics, California Department of Health Services, April 2002.

[11] Schmidt C, Wilson C. *County Health Status Profiles 2003.* Center for Health Statistics, California Department of Health Services, April 2003.

TABLE 1
DEATHS DUE TO ALZHEIMER'S DISEASE BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 2000
(By Place of Residence)

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
										TOTAL		MALE		FEMALE	
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL															
UNDER 1	0	0	0	556,635	284,653	271,982	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	2,225,385	1,138,537	1,086,848	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	5,567,090	2,851,540	2,715,550	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	4,615,641	2,395,832	2,219,809	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	4,998,216	2,643,192	2,355,024	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	5,751,694	2,942,371	2,809,323	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	9	5	4	4,469,059	2,221,466	2,247,593	0.2 *	0.2 *	0.2 *	0.1	0.3	0.0	0.4	0.0	0.4
55 - 64	31	12	19	2,756,954	1,343,573	1,413,381	1.1	0.9 *	1.3	0.7	1.5	0.4	1.4	0.7	1.9
65 - 74	279	126	153	1,957,505	901,472	1,056,033	14.3	14.0	14.5	12.6	15.9	11.5	16.4	12.2	16.8
75 - 84	1522	581	941	1,305,454	533,995	771,459	116.6	108.8	122.0	110.7	122.4	100.0	117.6	114.2	129.8
85 & OLDER	2556	663	1893	449,762	142,364	307,398	568.3	465.7	615.8	546.3	590.3	430.3	501.2	588.1	643.6
UNKNOWN	1	1	0												
TOTAL	4,398	1,388	3,010	34,653,395	17,398,995	17,254,400	12.7	8.0	17.4	12.3	13.1	7.6	8.4	16.8	18.1
AGE-ADJUSTED							15.1	13.1	16.1	14.7	15.6	12.4	13.8	15.5	16.7
ASIAN/OTHER															
UNDER 1	0	0	0	67,434	34,501	32,933	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	266,651	136,640	130,011	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	660,070	339,469	320,601	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	604,654	309,566	295,088	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	649,462	328,916	320,546	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	698,724	339,157	359,567	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	0	0	0	561,189	265,710	295,479	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
55 - 64	4	1	3	317,872	151,006	166,866	1.3 *	0.7 *	1.8 *	0.0	2.5	0.0	2.0	0.0	3.8
65 - 74	5	0	5	217,081	95,695	121,386	2.3 *	0.0 +	4.1 *	0.3	4.3	-	-	0.5	7.7
75 - 84	34	14	20	123,907	53,227	70,680	27.4	26.3 *	28.3	18.2	36.7	12.5	40.1	15.9	40.7
85 & OLDER	69	24	45	38,153	16,296	21,857	180.9	147.3	205.9	138.2	223.5	88.4	206.2	145.7	266.0
UNKNOWN	0	0	0												
TOTAL	112	39	73	4,205,197	2,070,183	2,135,014	2.7	1.9	3.4	2.2	3.2	1.3	2.5	2.6	4.2
AGE-ADJUSTED							4.3	3.5	4.9	3.5	5.1	2.4	4.6	3.8	6.0
BLACK															
UNDER 1	0	0	0	37,159	19,020	18,139	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	147,839	75,557	72,282	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	414,580	210,046	204,534	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	356,933	188,930	168,003	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	352,200	185,909	166,291	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	388,391	189,399	198,992	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	0	0	0	287,837	135,895	151,942	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
55 - 64	0	0	0	168,721	78,536	90,185	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
65 - 74	26	16	10	105,627	46,350	59,277	24.6	34.5 *	16.9 *	15.2	34.1	17.6	51.4	6.4	27.3
75 - 84	91	32	59	60,380	23,176	37,204	150.7	138.1	158.6	119.7	181.7	90.2	185.9	118.1	199.1
85 & OLDER	79	19	60	18,268	5,491	12,777	432.5	346.0	469.6	337.1	527.8	190.4	501.6	350.8	588.4
UNKNOWN	0	0	0												
TOTAL	196	67	129	2,337,935	1,158,309	1,179,626	8.4	5.8	10.9	7.2	9.6	4.4	7.2	9.0	12.8
AGE-ADJUSTED							15.1	13.8	15.5	13.0	17.2	10.4	17.3	12.8	18.2
HISPANIC															
UNDER 1	0	0	0	267,741	136,840	130,901	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	1,055,221	539,226	515,995	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	2,296,937	1,173,481	1,123,456	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	1,609,062	832,517	776,545	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	1,793,492	998,691	794,801	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	1,643,440	880,073	763,367	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	5	4	1	978,139	498,051	480,088	0.5 *	0.8 *	0.2 *	0.1	1.0	0.0	1.6	0.0	0.6
55 - 64	2	1	1	506,398	246,133	260,265	0.4 *	0.4 *	0.4 *	0.0	0.9	0.0	1.2	0.0	1.1
65 - 74	30	13	17	320,415	146,540	173,875	9.4	8.9 *	9.8 *	6.0	12.7	4.0	13.7	5.1	14.4
75 - 84	98	33	65	161,694	67,052	94,642	60.6	49.2	68.7	48.6	72.6	32.4	66.0	52.0	85.4
85 & OLDER	131	36	95	56,213	18,817	37,396	233.0	191.3	254.0	193.1	272.9	128.8	253.8	203.0	305.1
UNKNOWN	0	0	0												
TOTAL	266	87	179	10,688,752	5,537,421	5,151,331	2.5	1.6	3.5	2.2	2.8	1.2	1.9	3.0	4.0
AGE-ADJUSTED							7.1	5.9	7.7	6.2	7.9	4.6	7.2	6.6	8.9
WHITE															
UNDER 1	0	0	0	184,301	94,292	90,009	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	755,674	387,114	368,560	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	2,195,503	1,128,544	1,066,959	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	2,044,992	1,064,819	980,173	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	2,203,062	1,129,676	1,073,386	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	3,021,139	1,533,742	1,487,397	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	4	1	3	2,641,894	1,321,810	1,320,084	0.2 *	0.1 *	0.2 *	0.0	0.3	0.0	0.2	0.0	0.5
55 - 64	25	10	15	1,763,963	867,898	896,065	1.4	1.2 *	1.7 *	0.9	2.0	0.4	1.9	0.8	2.5
65 - 74	218	97	121	1,314,382	612,887	701,495	16.6	15.8	17.2	14.4	18.8	12.7	19.0	14.2	20.3
75 - 84	1299	502	797	959,473	390,540	568,933	135.4	128.5	140.1	128.0	142.7	117.3	139.8	130.4	149.8
85 & OLDER	2277	584	1693	337,128	101,760	235,368	675.4	573.9	719.3	647.7	703.2	527.4	620.4	685.0	753.6
UNKNOWN	1	1	0												
TOTAL	3,824	1,195	2,629	17,421,511	8,633,082	8,788,429	21.9	13.8	29.9	21.3	22.6	13.1	14.6	28.8	31.1
AGE-ADJUSTED							17.8	15.8	18.8	17.2	18.3	14.9	16.7	18.0	19.5

Note: ICD-10 Code G30; rates are per 100,000 population.
Year 2000 U.S. standard population is used for age-adjusted rates.
White, Black, and Asian/Other exclude Hispanic ethnicity.

* Death rate unreliable, relative standard error is greater than or equal to 23 percent.
\+ Standard error indeterminate, death rate based on no (zero) deaths.
\- Confidence limit is not calculated for no (zero) deaths.

The race/ethnic groups were tabulated using first listed race when certificates included more than one race.

Source: State of California, Department of Finance, 2000 Population Projections with Age, Sex and Race/Ethnic Detail, December 1998.

TABLE 2
DEATHS DUE TO ALZHEIMER'S DISEASE BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 1999
(By Place of Residence)

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
										TOTAL		MALE		FEMALE	
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL															
UNDER 1	0	0	0	553,480	283,033	270,447	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	2,218,731	1,134,840	1,083,891	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	5,438,254	2,785,041	2,653,213	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	4,490,994	2,331,075	2,159,919	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	5,088,372	2,693,838	2,394,534	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	1	1	0	5,703,159	2,911,607	2,791,552	0.0 *	0.0 *	0.0 +	0.0	0.1	0.0	0.1	-	-
45 - 54	5	3	2	4,284,494	2,127,558	2,156,936	0.1 *	0.1 *	0.1 *	0.0	0.2	0.0	0.3	0.0	0.2
55 - 64	31	17	14	2,647,776	1,289,251	1,358,525	1.2	1.3 *	1.0 *	0.8	1.6	0.7	1.9	0.5	1.6
65 - 74	271	123	148	1,945,679	889,827	1,055,852	13.9	13.8	14.0	12.3	15.6	11.4	16.3	11.8	16.3
75 - 84	1389	543	846	1,272,523	519,523	753,000	109.2	104.5	112.4	103.4	114.9	95.7	113.3	104.8	119.9
85 & OLDER	2237	572	1665	429,016	134,219	294,797	521.4	426.2	564.8	499.8	543.0	391.2	461.1	537.7	591.9
UNKNOWN	0	0	0												
TOTAL	3,934	1,259	2,675	34,072,478	17,099,812	16,972,666	11.5	7.4	15.8	11.2	11.9	7.0	7.8	15.2	16.4
AGE-ADJUSTED							14.0	12.3	14.8	13.6	14.5	11.7	13.0	14.3	15.4
ASIAN/OTHER															
UNDER 1	0	0	0	65,732	33,636	32,096	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	260,730	133,774	126,956	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	637,566	327,540	310,026	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	584,065	299,316	284,749	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	635,628	321,836	313,792	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	1	1	0	685,240	331,715	353,525	0.1 *	0.3 *	0.0 +	0.0	0.4	0.0	0.9	-	-
45 - 54	0	0	0	528,902	250,278	278,624	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
55 - 64	0	0	0	300,304	142,774	157,530	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
65 - 74	8	3	5	209,410	91,786	117,624	3.8 *	3.3 *	4.3 *	1.2	6.5	0.0	7.0	0.5	8.0
75 - 84	34	16	18	116,337	50,337	66,000	29.2	31.8 *	27.3 *	19.4	39.0	16.2	47.4	14.7	39.9
85 & OLDER	42	13	29	35,195	15,278	19,917	119.3	85.1 *	145.6	83.2	155.4	38.8	131.3	92.6	198.6
UNKNOWN	0	0	0												
TOTAL	85	33	52	4,059,109	1,998,270	2,060,839	2.1	1.7	2.5	1.6	2.5	1.1	2.2	1.8	3.2
AGE-ADJUSTED							3.4	3.0	3.8	2.7	4.2	2.0	4.0	2.7	4.8
BLACK															
UNDER 1	0	0	0	37,436	19,147	18,289	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	150,150	76,493	73,657	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	412,399	208,881	203,518	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	352,398	186,295	166,103	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	361,723	189,557	172,166	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	387,780	188,667	199,113	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	0	0	0	274,298	129,075	145,223	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
55 - 64	4	3	1	164,532	76,514	88,018	2.4 *	3.9 *	1.1 *	0.0	4.8	0.0	8.4	0.0	3.4
65 - 74	19	8	11	103,767	44,942	58,825	18.3	17.8 *	18.7 *	10.1	26.5	5.5	30.1	7.6	29.8
75 - 84	70	29	41	58,756	22,082	36,674	119.1	131.3	111.8	91.2	147.0	83.5	179.1	77.6	146.0
85 & OLDER	87	24	63	17,677	5,158	12,519	492.2	465.3	503.2	388.7	595.6	279.1	651.5	379.0	627.5
UNKNOWN	0	0	0												
TOTAL	180	64	116	2,320,916	1,146,811	1,174,105	7.8	5.6	9.9	6.6	8.9	4.2	6.9	8.1	11.7
AGE-ADJUSTED							14.4	14.6	14.2	12.3	16.5	10.9	18.3	11.6	16.7
HISPANIC															
UNDER 1	0	0	0	263,940	134,897	129,043	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	1,043,348	532,534	510,814	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	2,187,045	1,117,326	1,069,719	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	1,555,795	803,837	751,958	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	1,812,547	1,014,469	798,078	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	1,581,171	842,312	738,859	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	1	0	1	912,180	462,923	449,257	0.1 *	0.0 +	0.2 *	0.0	0.3	-	-	0.0	0.7
55 - 64	2	1	1	481,158	233,374	247,784	0.4 *	0.4 *	0.4 *	0.0	1.0	0.0	1.3	0.0	1.2
65 - 74	22	10	12	309,686	140,820	168,866	7.1	7.1 *	7.1 *	4.1	10.1	2.7	11.5	3.1	11.1
75 - 84	94	36	58	152,091	62,846	89,245	61.8	57.3	65.0	49.3	74.3	38.6	76.0	48.3	81.7
85 & OLDER	124	33	91	53,802	18,170	35,632	230.5	181.6	255.4	189.9	271.0	119.7	243.6	202.9	307.9
UNKNOWN	0	0	0												
TOTAL	243	80	163	10,352,763	5,363,508	4,989,255	2.3	1.5	3.3	2.1	2.6	1.2	1.8	2.8	3.8
AGE-ADJUSTED							6.9	5.9	7.4	6.0	7.7	4.6	7.2	6.3	8.6
WHITE															
UNDER 1	0	0	0	186,372	95,353	91,019	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 - 4	0	0	0	764,503	392,039	372,464	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 - 14	0	0	0	2,201,244	1,131,294	1,069,950	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 - 24	0	0	0	1,998,736	1,041,627	957,109	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 - 34	0	0	0	2,278,474	1,167,976	1,110,498	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 - 44	0	0	0	3,048,968	1,548,913	1,500,055	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
45 - 54	4	3	1	2,569,114	1,285,282	1,283,832	0.2 *	0.2 *	0.1 *	0.0	0.3	0.0	0.5	0.0	0.2
55 - 64	25	13	12	1,701,782	836,589	865,193	1.5	1.6 *	1.4 *	0.9	2.0	0.7	2.4	0.6	2.2
65 - 74	222	102	120	1,322,816	612,279	710,537	16.8	16.7	16.9	14.6	19.0	13.4	19.9	13.9	19.9
75 - 84	1191	462	729	945,339	384,258	561,081	126.0	120.2	129.9	118.8	133.1	109.3	131.2	120.5	139.4
85 & OLDER	1984	502	1482	322,342	95,613	226,729	615.5	525.0	653.6	588.4	642.6	479.1	571.0	620.4	686.9
UNKNOWN	0	0	0												
TOTAL	3,426	1,082	2,344	17,339,690	8,591,223	8,748,467	19.8	12.6	26.8	19.1	20.4	11.8	13.3	25.7	27.9
AGE-ADJUSTED							16.5	14.8	17.2	15.9	17.0	13.9	15.7	16.5	17.9

Note: ICD-10 Codes G30; rates are per 100,000 population.
Year 2000 U.S. standard population is used for age-adjusted rates.
White, Black, and Asian/Other exclude Hispanic ethnicity.

* Death rate unreliable, relative standard error is greater than or equal to 23 percent.
\+ Standard error indeterminate, death rate based on no (zero) deaths.
\- Confidence limit is not calculated for no (zero) deaths.

Source: State of California, Department of Finance, 1999 Population Projections with Age, Sex and Race/Ethnic Detail, May, 2000.
State of California, Department of Health Services, Death Records.

TABLE 3
DEATHS DUE TO ALZHEIMER'S DISEASE
CALIFORNIA COUNTIES, 1999-2000
(By Place of Residence)

COUNTY	1999 - 2000 DEATHS (AVERAGE)	PERCENT	1999 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	4,166.0	100.0	34,072,478	12.2	14.9	14.4	15.3
ALAMEDA	196.0	4.7	1,448,643	13.5	16.4	14.1	18.7
ALPINE	0.0	0.0	1,226	0.0 +	0.0 +	-	-
AMADOR	5.0	0.1	34,410	14.5 *	9.6 *	1.2	18.0
BUTTE	30.0	0.7	204,216	14.7	9.3	6.0	12.7
CALAVERAS	4.0	0.1	40,597	9.9 *	6.9 *	0.1	13.8
COLUSA	2.0	0.0	20,091	10.0 *	9.5 *	0.0	22.7
CONTRA COSTA	112.0	2.7	921,662	12.2	13.9	11.3	16.4
DEL NORTE	2.0	0.0	30,358	6.6 *	5.6 *	0.0	13.4
EL DORADO	19.5	0.5	156,996	12.4	14.5	8.0	20.9
FRESNO	93.0	2.2	800,121	11.6	14.2	11.3	17.1
GLENN	3.5	0.1	28,438	12.3 *	10.6 *	0.0	21.7
HUMBOLDT	26.5	0.6	127,658	20.8	20.6	12.8	28.5
IMPERIAL	5.0	0.1	150,381	3.3 *	4.5 *	0.5	8.4
INYO	0.5	a	18,348	2.7 *	1.8 *	0.0	7.0
KERN	44.5	1.1	662,472	6.7	8.3	5.9	10.8
KINGS	8.5	0.2	123,683	6.9 *	11.6 *	3.8	19.4
LAKE	6.0	0.1	58,335	10.3 *	5.7 *	1.1	10.2
LASSEN	3.5	0.1	35,208	9.9 *	11.6 *	0.0	23.7
LOS ANGELES	796.0	19.1	9,727,841	8.2	11.1	10.3	11.9
MADERA	34.0	0.8	121,779	27.9	30.9	20.5	41.2
MARIN	34.0	0.8	247,073	13.8	13.8	9.2	18.4
MARIPOSA	1.5	a	16,339	9.2 *	6.0 *	0.0	15.8
MENDOCINO	11.5	0.3	88,978	12.9 *	11.8 *	5.0	18.6
MERCED	23.0	0.6	210,707	10.9	15.9	9.4	22.4
MODOC	3.5	0.1	10,384	33.7 *	23.5 *	0.0	48.1
MONO	1.0	a	10,730	9.3 *	15.8 *	0.0	46.9
MONTEREY	43.5	1.0	395,133	11.0	14.6	10.2	18.9
NAPA	41.5	1.0	125,123	33.2	23.1	16.0	30.1
NEVADA	9.0	0.2	94,014	9.6 *	6.4 *	2.2	10.6
ORANGE	278.5	6.7	2,787,593	10.0	14.8	13.1	16.5
PLACER	49.5	1.2	233,836	21.2	22.9	16.6	29.3
PLUMAS	2.5	0.1	20,714	12.1 *	8.1 *	0.0	18.2
RIVERSIDE	264.0	6.3	1,519,469	17.4	16.6	14.6	18.6
SACRAMENTO	142.5	3.4	1,189,056	12.0	15.0	12.6	17.5
SAN BENITO	3.5	0.1	50,087	7.0 *	8.3 *	0.0	17.0
SAN BERNARDINO	174.5	4.2	1,688,984	10.3	16.4	14.0	18.8
SAN DIEGO	745.5	17.9	2,884,572	25.8	30.1	27.9	32.2
SAN FRANCISCO	125.0	3.0	788,975	15.8	12.0	9.8	14.1
SAN JOAQUIN	52.5	1.3	566,793	9.3	10.0	7.3	12.7
SAN LUIS OBISPO	34.5	0.8	247,880	13.9	11.3	7.5	15.1
SAN MATEO	114.0	2.7	735,381	15.5	15.9	13.0	18.8
SANTA BARBARA	69.5	1.7	408,292	17.0	16.4	12.5	20.3
SANTA CLARA	157.0	3.8	1,732,034	9.1	14.2	11.9	16.4
SANTA CRUZ	18.0	0.4	255,825	7.0 *	7.5 *	4.0	11.0
SHASTA	20.5	0.5	171,211	12.0	10.6	6.0	15.3
SIERRA	0.5	a	3,427	14.6 *	10.4 *	0.0	39.4
SISKIYOU	8.5	0.2	44,847	19.0 *	14.1 *	4.6	23.5
SOLANO	51.5	1.2	392,201	13.1	21.8	15.8	27.8
SONOMA	78.5	1.9	450,187	17.4	15.6	12.1	19.0
STANISLAUS	60.5	1.5	446,056	13.6	16.1	12.1	20.2
SUTTER	5.0	0.1	79,992	6.3 *	6.1 *	0.8	11.5
TEHAMA	7.5	0.2	55,806	13.4 *	9.7 *	2.7	16.7
TRINITY	1.0	a	13,353	7.5 *	6.4 *	0.0	19.1
TULARE	19.5	0.5	371,640	5.2	6.2	3.4	8.9
TUOLUMNE	9.5	0.2	54,631	17.4 *	12.6 *	4.5	20.7
VENTURA	87.5	2.1	744,825	11.7	15.2	12.0	18.4
YOLO	20.5	0.5	160,805	12.7	16.2	9.2	23.2
YUBA	4.5	0.1	63,062	7.1 *	9.2 *	0.7	17.8

Note: ICD-10 code G30; rates are per 100,000 population.
Year 2000 U.S. standard population is used for age-adjusted rates.
White, Black, and Asian/Other exclude Hispanic ethnicity.
The race/ethnic groups on this table were tabulated based on the first listed race on those certificates where more than one race was listed.

* Death rate unreliable (relative standard error is greater than or equal to 23 percent).
a Represents a percentage of more than zero but less than 0.05.
- Confidence limit is not calculated for no (zero) events.

Source: State of California, Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1999, May 2000.
State of California, Department of Health Services, Death Records.